HINTERLAND WHO'S WHO

THE WHOOPING CRANE

Canadian Wildlife Service

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Hinterland who's who: the Whooping Crane (Grus americana)

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CANADIAN WILDLIFE SERVICE

Whooping crane. Credit U.S. Fish and Wildlife Service

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(Grus americana)

The pothole area south of Great Slave Lake is some 2,500 miles from the salt marsh of Blackjack Peninsula on the Texas coast of the Gulf of Mexico. These two widely separated areas have in common that they are essential to the survival of North America's rarest and most magnificent bird – the whooping crane.

Each spring the few remaining wild whoopers leave their wintering ground in the Aransas Refuge in Texas and wing their way north over Oklahoma, Kansas, Nebraska, the Dakotas, Saskatchewan, northeastern Alberta, and into the Northwest Territories. There, in Wood Buffalo National Park, between the

headwaters of the Nyarling, Sass, and Klewi Rivers, they make their nests and rear their young. In September or early October they set their course southward again toward their wintering ground in Texas.

In February 1968 there were 58 whooping cranes of which 11 were in captivity. As recently as the autumn of 1956 there were only 24 wild birds. In 1941, the total continental population was down to 15, and at that time it appeared almost inevitable that the whooping crane would become extinct within a few years.

Recognizing this danger, a number of naturalists and biologists began a campaign to save the species. The cranes have responded by gradually increasing, but survival of the species is still precarious.

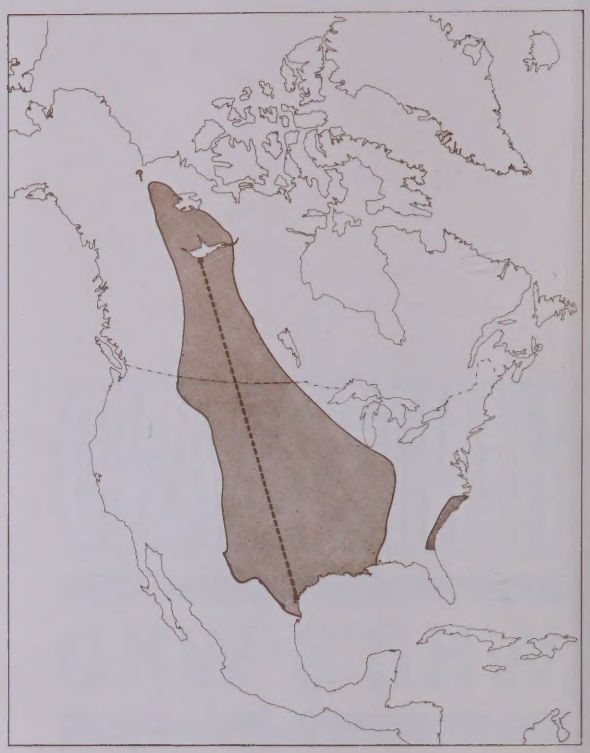
General appearance

The whooping crane is a large satiny-white bird with a long neck, long dark pointed bill, and long thin black legs. When standing erect, a large male stands more than five feet tall – the tallest of all North American birds. At close range it is an imposing and beautiful bird, with its cap of crimson skin, its bright yellow eyes, and its arched, drooping tail plumes. In the air it is even more magnificent. The white wings measure six feet or more between the tips of the long, black flight feathers that fan out like fingers. In flight the head is extended forward like a lance, and the legs trail equally straight behind. In normal flight the great wings beat in powerful, slow rhythm, at about two beats per second, with a quick, strong upward flick. Normal flying speed is about 45 miles per hour. It has a loud, clear, bugle-like call.

The whooping crane and its relatives

Cranes belong to the order of birds known scientifically as the Gruiformes. In the same order are the rails, coots, gallinules, bustards, sun-grebes, and sun-bitterns.

There are about 14 species of cranes in the world. Cranes are found on all continents except South America. Two species are found in North America – the whooping crane and the sandhill crane. Sandhill cranes, smaller than whoopers, are grey and brown in colour. Sandhill cranes are gregarious and their habitat requirements are less specialized. They are relatively numerous.



Approximate nineteenth-century range of the whooping crane. Black line indicates present breeding and winter range and migration path

Range and habitat

Whooping cranes have probably never been numerous. By 1850, there were probably only 1,500. Their winter range then extended from north Mexico through Texas to the Louisiana coast, with scattered groups on the Atlantic coast. They nested over a wide area from the southern end of Lake Michigan to the Peace River country of Alberta, with scattered breeding populations throughout the Mackenzie River system and northward to the Arctic coast.

In contrast to this original large range, the present known range of the whooping crane is tiny. The nesting area is 500 square miles and the wintering ground only about 15 square miles.

Whooping cranes have exacting territorial requirements. In winter they select an area of salt marsh which they defend against other cranes and which provides all their food: blue crabs, crayfish, freshwater minnows, mullet, and aquatic insects like dragonflies, beetles, and water boatmen. These winter territories average over 400 acres per pair.

The whooping crane's requirements for nesting are also rigid. Each pair needs a considerable area of shallow water or marsh, with sedge, grasses, bulrushes, and abundant water animals and insects for food. This need for isolation and a specialized environment made their great nesting range unsuitable with the coming of settlement. Under pressure of farming, cattle grazing, settlement, hunting, even egg collecting, whooping cranes disappeared from central North America. It has been estimated that the whooping crane population declined 90 per cent from 1870 to 1900.

Since 1922, when a pair nested near Davidson, Saskatchewan, not a single nest has been found in settled regions; in fact, for nearly three decades, until 1954, the whereabouts of the nesting ground remained a mystery. It was discovered accidentally when a forestry officer and a helicopter pilot, G. M. Wilson and J. D. Landells, carrying equipment to a forest fire, spotted a young bird with two adults south of Great Slave Lake. This sighting was confirmed the next day, and the location of the nesting ground definitely established by ground search in 1955.

Habits and life history

Although capable flyers, whooping cranes seem equally at home on the ground, spending about half their daily lives walking about in sloughs, marshes, and low-lying flat areas in search of food.

In fine, calm weather they may fly, apparently for pleasure, sometimes rising a mile or more in great slow spirals, circling and whooping with their melodious *Ker-loo, Ker-lee-oo*. They may circle for an hour or more, dots in the blue sky barely perceptible to the observer below. They may descend in long spirals, or may swoop and dive quickly down to within 50 feet of the ground, finally settling to the ground on outspread wings. When flying aloft they may execute many graceful patterns of flight, flying in circles, forming sides, crossing over and back, and almost seeming to dance in mid-air. A crane in flight, seen at close range, with a flash of sunlight on its satin-white plumage, presents a magnificent picture of grace, strength, and beauty.

In mid-December the mating dances begin. The dance has several variations. In one the male pumps his head up and down in a series of bows, at the same time flapping his wings slowly and leaping lightly off the ground. He may bow until his bill almost touches the ground, then may raise his head and point his bill in the air at a steep angle, then bow again, and perhaps rotate a full or half circle, leaping, whirling, and fanning the air with his wings. The female sometimes participates in the dance. It is thought that the birds mate for life. The mating dance occurs annually, but with reduced intensity.

The whooping cranes usually leave their wintering grounds in the last week of March or the first half of April. They move north in 200- or 300-mile stages, and may rest for several days at staging areas in Nebraska or Saskatchewan. They may roost on river bars at night, and in the morning feed on the egg masses of frogs and toads or on other aquatic life. Often they walk over adjoining fields seeking beetles and other insects.

By the first or second week of May the nesting pairs arrive at their nesting grounds. Mated pairs dance on the nesting area and while nest building. Not all the cranes are breeding birds. There is evidence that the cranes do not breed until they are at least two years of age or older. Others may be past breeding age. Still others may not be able to find a mate in the very small population that now exists. These non-breeding cranes are the summer wanderers. They may be seen singly or in small groups anywhere on the former summer breeding range of the whooping crane – perhaps on some Saskatchewan marsh, or in the Peace River country of Alberta. The nesting area, like the Texas wintering grounds, is a low-lying area of marsh, sloughs, and mud flats, much of it grown to bulrushes, sedges, cattails, and other semi-aquatic plants. The area is nearly inaccessible to man.

The many sloughs and marshes of the nesting area contain abundant food: a few small fish such as brook stickleback and fat-head minnows, and many wood frogs, chorus frogs, and many species of molluscs, especially snails and small clams. Insects of the area include dragonflies, damsel flies, mayflies, backswimmers, and many diving beetles, water mites, caddis flies, and bristleworms. The nymphs of the first three undoubtedly form a large part of the cranes' spring and early summer diet.

Additional notes

The nest is usually set in 15 or 16 inches of water, but may be on firm ground near water. It is built of rushes and reeds, with a covering layer of grass, and rises 10 to 15 inches above the water surface.

The female usually lays two eggs, but occasionally only one. The shells are smooth and somewhat glossy. The colour varies from cream buff to olive buff, and is blotched quite heavily near the large end with various shades of brown. Only one egg is raised, although both may hatch. The second chick either dies or is destroyed. It seems that there is not room on the high-crowned nest for more than one chick. The production of two fertile eggs, only one of which is raised, is a form of natural "insurance" against destruction or loss of the first egg.

The incubation period lasts about 34 days. One bird is always on the nest or closely guarding it. The male takes his turn at incubating and always seems preoccupied with guarding the nest. He will fly or run at any invader, uttering loud whooping noises, and is well able to chase away coyote, fox, raven, eagle, bittern, or other intruder. The reddish-yellow young hatch during the second week of June. From then until about December the parents capture food for the young birds. They often break shellfish and snails to prepare them for consumption by the young birds. The young birds practise flying in September and by late September or early October are ready to try their wings on the long 2,500-mile journey southward. The young of the year are not as large as the adult birds, and their plumage is buff, cinnamon, and russet mixed with white.

Young whoopers may be easily mistaken for sandhill cranes. In this resemblance lies one of the dangers to the whooping crane. Shooting of sandhill cranes – either with a depredation licence or in special limited seasons – is permitted in some areas but under careful supervision, and the licence or season is terminated if a whooper is observed in the area. However, there is still the danger that an illegal or unknowing hunter will shoot a whooping crane, particularly a young one.

The young remain with their parents during the first winter on the refuge. They make the return flight north alone and unfortunately mortality is very high, owing to the young birds' inexperience. Biologists do not know exactly what mortality factors affect the young birds, but few reach the nesting grounds.

Management and preservation

Naturalists had been concerned for many years about the possibility that this magnificent bird might become extinct. Destruction of habitat was the main reason for the decline of the whooping crane to less than 100 in the 1920's. The winter range had been seriously reduced by cattle grazing, fire, water pollution, and, in Louisiana especially, rice growing. In 1937 the United States Government established the National Wildlife Refuge at Aransas to preserve at least a remnant of habitat suitable for the whooping cranes.

Whooping cranes were hunted openly up to the early 1900's but were never numerous enough to be an important sport species. The birds were protected by law in 1918, but nonetheless the population continued to decrease. Early in the 1940's the National Audubon Society took action to stem the seemingly inevitable march of the whooper toward extinction. The society sponsored a detailed biological investigation to accumulate enough knowledge about the crane to enable effective management. In the decade following 1945 federal, state, provincial, and private agencies throughout the migration route carried out an intensive publicity campaign to reduce accidental or intentional kill by hunters.

In early June 1967 a team of scientists from the U.S. Fish and Wildlife Service and the Canadian Wildlife Service took six eggs from Wood Buffalo National Park for artificial incubation. A biologist flown in by helicopter waded hip-deep in the muskeg to take one egg from each of six nests – thus leaving an egg to be hatched and raised by the parents. All the adult cranes returned to their nests. The eggs were flown to a special rearing station at Patuxent, Maryland. Unfortunately one hatched and died en route, and a second has subsequently died. The remaining four are doing well. The intention is to build up a captive propagating flock and eventually release offspring to bolster the wild population.

The cranes' long struggle for survival has many years to go before the population is at

a safe level. If the battle for survival is won, the North American public will have reason for some self-satisfaction. However, the whooping crane has been fortunate because its plight has been dramatized and public opinion effectively mobilized in its support. Several other lesser known species – such as the Eskimo curlew, the Ipswich sparrow, the greater prairie chicken – urgently require the devoted research and management that the whooping crane has received if they are not to become extinct. Few people realize that hawks, eagles, and owls in Canada could be exterminated. Being flesh eaters, they are at the end of a food chain, each link of which accumulates higher concentrations of chemical poisons, originally sprayed on crops to protect them from insect damage. All species are part of our natural heritage, and their preservation is scientifically and aesthetically desirable.

Reading list

A report on the whooping crane's northern breeding ground. R. P. Allen. National Audubon Society. A supplement to Research Report No. 3. 1956.

The whooping crane. R. P. Allen. Research Report No. 3. National Audubon Society. 1952.

The whooping crane: the bird that defies extinction. Faith McNulty. Toronto, Clarke Irwin. 1966.

Whooping crane population dynamics on the nesting grounds, Wood Buffalo National Park, Northwest Territories. N. S. Novakowski. Canadian Wildlife Service Report Series No. 1. 1966. Available from the Queen's Printer for 50¢.

How does the Canadian Wildlife Service fit into the national wildlife picture?

The Canadian Wildlife Service carries out both wildlife research and management. As a branch of the Department of Indian Affairs and Northern Development, it is entrusted with federal responsibilities for wildlife, a renewable resource of ever-increasing importance to the national welfare and economy.

Each province has control over the natural resources within its boundaries, including wildlife. However, because Canada signed the Migratory Birds Treaty with the United States in 1916, there is a federal responsibility for the management and protection of migratory birds. The Canadian Wildlife Service administers the Migratory Birds Convention Act and Regulations for the federal government. In practice, federal and provincial governments co-operate in all matters concerning migratory birds. The Canadian Wildlife Service studies migratory birds throughout Canada and conducts scientific research into other wildlife problems in the Northwest Territories, the Yukon Territory, and Canada's National Parks; it also co-operates with administrative agencies when wildlife management programs indicated by research are instituted.

The Wildlife Service staff includes mammalogists, ornithologists, limnologists, pathologists, a pesticide investigator, and a biometrician. The head office is in Ottawa and there are regional offices in Edmonton and Ottawa. Smaller offices are located at Fort Smith and Inuvik, Northwest Territories; Whitehorse, Yukon Territory; Vancouver, British Columbia; Calgary, Alberta; Saskatoon, Saskatchewan; Winnipeg, Manitoba; Aurora, Ontario; Ste-Foy, Quebec; Fredericton and Sackville, New Brunswick; Halifax, Nova Scotia; and St. John's, Newfoundland.

The Service administers 94 migratory bird sanctuaries throughout Canada. It is now participating with the provinces in a major program of preserving, by purchase and long-term lease, wetlands necessary to migratory birds for breeding and for resting during migration.

A National Wildlife Policy and Program was announced on April 6, 1966, that provides for expanded research and management in co-operation with the provincial game agencies and other interested organizations.

For further information on wildlife in your province please contact your chief provincial game officer.

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